

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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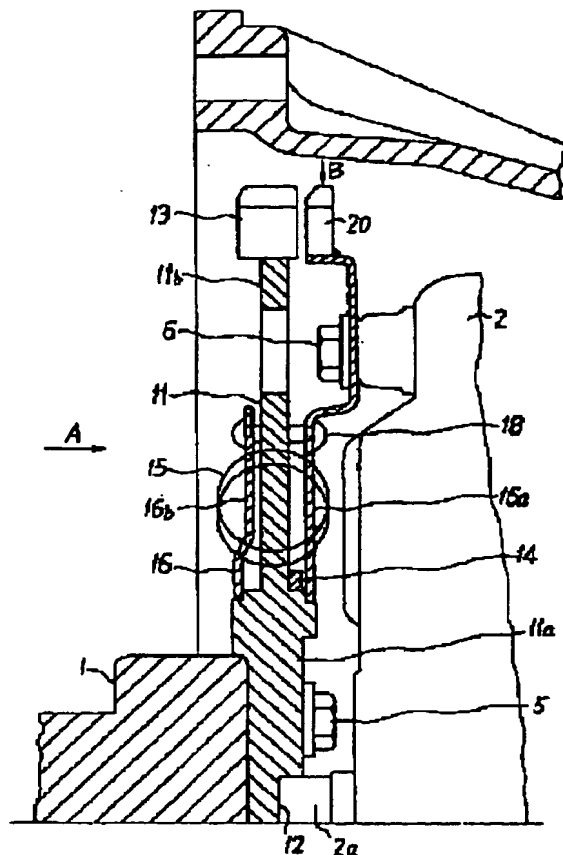
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APPLICANT : ATSUGI UNISIA CORP;

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TITLE : TORSIONAL DAMPER



**ABSTRACT :** **PURPOSE:** To improve the durability of a torsional damper at the engine start time and reduce vibration in a practical engine speed region by providing a driven member with a synchronous mesh means to be meshed with a starter motor pinion synchronously with a ring gear at the starter motor operating time.

**CONSTITUTION:** A ring gear 13 fixed to a hub arm 11 connected to a crank shaft 1, and a ring gear 20 serving as a synchronous mesh means provided at a hub case 16a connected to a converter cover 2 are synchronously meshed in association with the approach of a starter pinion at the engine start time, and this state continues until after the engine speed passes the resonant rotating speed of a torsional damper. The torque fluctuation of the torsional damper is thereby suppressed to a low level so as to improve the durability of the torsional damper. The synchronous mesh state is then released to secure the vibration reducing effect in an practical engine speed region.

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